reduce the potential for collisions within an idle time, one embodiment of the present scheme restricts devices to a predetermined time duration for any such transmissions. In other words, only packets up to a predetermined size are eligible for transmission in an idle time.

IN THE CLAIMS

Please cancel claims 1-5 and 10-12.

Please amend claims 6, 16 and 17.

Please add claims 19-29.

6.   (Amended) A method, comprising maintaining a clear channel assessment that takes into account a first device's designated transmission time slot within a communication channel with respect to those of other network devices in order to determine idle times that exist after completion of all regularly scheduled transmissions within the communication channel.

16.   (Amended) A method comprising accommodating asynchronous data transmissions within a synchronized network, in which inter-node communications are organized into frames of time periods, by permitting such asynchronous communications within otherwise idle times within those frames having unused idle times that occur upon completion of all regularly scheduled transmissions within such frames.

17.   (Amended) The method of claim 16 wherein use of the idle times takes into account a transmitting node's designated transmission time within a particular frame with respect to transmission times of other nodes of the network.

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19.   (New) A method, comprising:

allocating, for each of a number of clients of a computer network, a designated transmission time slot within each network frame period of a communication channel of the computer network;

establishing a common clear channel waiting time to be used by each of the clients of the computer network;

upon detecting an idle time at an end of a network frame period, those of the clients of the computer network having data to transmit sharing the idle time for transmissions of data according to a sharing plan that takes into account the common clear channel waiting time.

20.   (New) The method of claim 19, wherein the sharing plan comprises those of the clients of the computer network having data to transmit each waiting a time $T_{idle}=T_{CCA} * C$ before transmitting a packet within the idle time, where T_{CCA} is the common clear channel waiting time, and C is a difference between a client's designated transmission time slot and a transmission time slot of a last client to transmit within the channel.

21.   (New) The method of claim 19 wherein those of the clients of the computer network having data to transmit, transmit only one packet in the idle time.

22.   (New) The method of claim 19 wherein those of the clients of the computer network having data to transmit take turns transmitting asynchronous data over the channel in the idle time.

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23.   (New) The method of claim 22, wherein those of the clients of the computer network having data to transmit take turns by each computing a waiting time $T_{idle}=T_{CCA} * C$ before transmitting a packet within the idle time, where T_{CCA} is the common clear channel waiting time, and C is a difference between a client's designated transmission time slot and a transmission time slot of a last client to transmit within the channel; and then transmitting only a single packet.

24.   (New) The method of claim 19, wherein those of the clients of the computer network having data to transmit take turns transmitting low priority data over the channel in the idle time.

25.   (New) The method of claim 24, wherein those of the clients of the computer network having data to transmit take turns by each computing a waiting time $T_{idle}=T_{CCA} * C$ before transmitting a packet within the idle time, where T_{CCA} is the common clear channel waiting time, and C is a difference between a client's designated transmission time slot and a transmission time slot of a last client to transmit within the channel; and then transmitting only a single packet.

26.   (New) The method of claim 19, wherein the sharing plan further takes into account each respective client's designated transmission time slot within network frame periods.

27.   (New) The method of claim 26, further comprising one of the clients of the computer network requesting a new designated transmission time slot earlier in each network frame period that a current designated transmission time slot of that client in order to have a better chance of making use of the idle time.

28.   (New) The method of claim 19, further comprising a first one of the clients of the computer network transmitting a packet in the idle time after waiting a time $T_{idle}=T_{CCA} * C$, where T_{CCA} is the common clear channel waiting time, and C is a difference between the first client's designated transmission time slot and a transmission time slot of a last client to transmit within the channel.

29.   (New) The method of claim 28, further comprising the first client reprogramming its T_{idle} as $T_{idle}=T_{CCA} *N$, where N is the total number of devices in the computer network.

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